

FORESTRY '97

and Related Industries

A Summary of Occupational Injury and Disease

Alberta, 1993 to 1997



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1 Introduction

The Mission of Alberta Labour

The mission of Alberta Labour is to work in partnership with Albertans to promote safe and healthy workplaces, a quality working life and comprehensive safety systems. To this end, Alberta Labour recognizes that monitoring health and safety in Alberta will help to ensure that primary workplace health and safety concerns are actively managed and prioritized and resources directed where most needed.

This report summarizes the lost-time injuries and disease descriptions and characteristics of the injured worker and the risk of injury to workers in Alberta's forest industry for the years 1993 to 1997. A summary of occupational fatalities accepted by the Workers' Compensation Board (WCB) and detailed description of those fatalities investigated by Occupational Health and Safety (OHS) are also provided. Cost of injuries and revenue in terms of insurable earning and premiums and the number of employers that received a certificate of recognition are also provided.

The Forest industry groups in this report include: Primary Forest Activities and Forest Product Manufacturing.

2 Primary Forest Activities

For the sake of simplicity, primary forest activities will be called forestry in this report. This activity is made up of two industries: Logging and Woodlands Operations and Timber Management.

2.1 Industry Descriptions

Logging and Woodlands Operations (Industry # 03100)

This classification involves harvesting trees which are used for a number of wood products, e.g., lumber, ties, lath, plywood, chipboard, building logs, posts, mine props, rails, pulpwood and firewood.

Logging involves cutting trees with hand held chain saws and/or mechanized tree harvesters. Activities include falling trees, delimbing and topping, sawing into lengths, skidding, piling, loading and hauling logs. Logging operations may also include the construction and maintenance of access roads into the logging area, surveying, block layout, log scaling, scarification and reforestation (when completed by the logging contractor).

The trucking of logs is included in this classification.

Woodlands administration refers to the management of one's timber disposition and involves calculations of annual allowable cuts, forest management planning, contractor supervision, etc. When performed by a mill who has contracted all logging to unrelated loggers, woodlands administration is to be classified under the appropriate milling class.

Timber Management (Industry # 03902)

This classification is intended to cover those activities, carried on as a separate industry, that perform a service to the logging industry. Employers in this industry do no logging, sawing or handling of logs, nor do they use any equipment or tools of any significant size.

Planting of seedlings is performed with a variety of hand tools designed to punch a hole in the ground into which a seedling is placed. Check plots are performed on recently planted areas as a visual inspection intended to determine the effectiveness of the planters' work.

Regeneration Surveys are the inspection of logged areas to determine natural stocking levels. The cut block is divided into a grid pattern of equal spacing. Each point in the grid is inspected for a one square metre area in an effort to locate natural regeneration (seedling). Unstocked blocks will require planting and seedling. The only tool used in regeneration surveys are small hand

rakes for clearing tall grass and debris.

Timber Cruising is a method of determining tree stand volumes, type and condition. Performed in pairs, timber cruisers follow predetermined compass bearing to arrive at numerous randomly selected plots. At the plots the timber cruisers use a variety of hand held measuring instruments to measure and record information needed to formulate harvest plans.

Block Layout is the marking of the cut block boundaries. Performed in pairs, this activity involves following predetermined compass bearing or natural stand boundaries while marking trees with seismic ribbon or spray paint.

Cone Picking is the natural gathering of cones to be used for seed. Often cone picking takes place in recently logged areas where cones are readily accessible in the remaining branches of the harvested trees.

Log Scaling is a method of determining volumes of harvested trees. Log scalers often work at the unloading deck of a mill but may scale logs at individual cut block landings. Using a calibrated measuring stick and a can of spray paint, the scaler considers diameter, length and wood rot to determine wood volumes.

Stand Tending is the process where competing vegetation is removed from immature stands to allow for optimum growing conditions. Small trees and vegetation are removed at predetermined spacing using brush cutters. This is a pre-commercial form of thinning. Power saws (chainsaws) are not to be included in this classification.

Economic Activity

Alberta's forestry industry is the fourth largest in Canada with shipment of more than \$4 billion, and is highly involved in export, with about \$2.6 billion shipped to the world market.

While 1995 was a good year for forestry, 1996 fell prey to lower lumber prices. This condition left only moderate potential for growth in forestry. Still, investment has been high in the past and about \$4 billion is expected by 1998.

Injury and Disease Analysis Summary

In 1997, employers engaged in this activity accounted for about 3% of all employers registered with WCB. Also, in terms of person-years, employment represented less than 1% of Alberta's labour force. The total number of lost-time claims decreased by 3% in 1997 to 241. More than 75% of the lost-time claims in forestry were from workers in Logging/Woodlands Operations. The duration rate in 1997 (239) was about three times the provincial average (90).

For the period 1993-1997, the most frequently injured body part was the back accounting for 19% of all the claims. Leg injuries rank second with 17%. 32% of all the injured workers were on long term disability (at least 51 days).

2.2 Injury and Disease Statistics

2.2.1 Duration Rate & Lost-Time Claim(LTC) Rate

Forestry

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	2,140	\$1,388,364	3,345	10,927	327	179	5.4
1994	2,674	\$1,571,045	5,502	12,299	224	263	4.8
1995	3,120	\$1,886,703	5,936	15,155	255	261	4.4
1996	2,964	\$1,832,357	5,254	14,997	285	248	4.7
1997	2,822	\$2,077,085	5,379	12,866	239	241	4.5

2.2.3 LTC Rate By Industry

Logging and Woodlands Operations

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	2,067	\$1,273,161	3,015	9,661	320	134	4.4
1994	2,572	\$1,460,604	4,915	10,737	218	181	3.7
1995	3,004	\$1,536,569	5,284	13,051	247	193	3.7
1996	2,839	\$1,711,024	4,524	13,194	292	179	4.0
1997	2,691	\$1,961,420	4,610	11,465	249	188	4.1

Timber Management

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	73	\$115,204	330	1,266	384	45	13.6
1994	102	\$110,440	587	1,562	266	82	14.0
1995	116	\$350,134	652	2,104	323	68	10.4
1996	125	\$121,333	730	1,803	247	69	9.4
1997	131	\$115,665	769	1,401	182	53	6.9

2.2.4 Forestry LTC Rate By Size¹ of Employer - 1997 only

Size of Employer	# of Accounts	LTCs	Person Years	LTC Rate
A: 0 < PYs <=1	1,786	59	697	8.5
B: 1 < PYs < 5	558	67	1,180	5.7
C: 5 <= PYs < 10	92	29	621	4.7
D: 10 <= PYs < 20	57	26	813	3.2
E: 20 <= PYs < 50	36	41	1,118	3.7
F: 50 <= PYs < 100	7	14	443	3.2
G: PYs >=100	3	1	507	0.2
H: Invalid	283	4	0	N/A
Total	2,822	241	5,379	4.5

¹ Size is measured in terms of estimated person-years (PYs)

3. Analysis Of Lost-Time Claims In Forestry

3.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
SPRAIN, STRAIN	53	89	80	76	80	378	31.7
FRACTURE & DISLOCATION							
FRACTURE	39	42	38	36	40	195	16.4
OTHER NATURE	2	1	3	3	6	15	1.3
SUBTOTAL	41	43	41	39	46	210	17.6
BRUISE, CONTUSION, CRUSHING	19	28	34	45	37	163	13.7
CUT, LACERATION, PUNCTURE	25	34	35	18	28	140	11.7
OTHER INJURY	2	6	6	22	13	49	4.1
MULTIPLE INJURIES	9	12	13	4	4	42	3.5
OTHER DISEASE	5	8	5	12	10	40	3.4
INFLAMED/IRRITATED JOINTS, ETC.	3	14	10	6	5	38	3.2
SCRATCH, ABRASION	5	7	9	10	2	33	2.8
ALL OTHER NATURES, UNS	17	22	28	16	16	99	8.3
Total	179	263	261	248	241	1,192	100.0

3.2 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
PLANTS, TREES, VEGETATION	40	45	47	57	44	233	19.5
SOURCE-UNS	20	42	43	48	53	206	17.3
VEHICLES							
HIGHWAY VEHICLES (POWERED)	19	23	35	20	24	121	10.2
ALL TERRAIN VEHICLES	5	6	6	5	6	28	2.3
OTHER SOURCE	3	4	10	6	7	30	2.5
SUBTOTAL	27	33	51	31	37	179	15.0
BODILY MOTION							
REPETITIVE MOTION	5	11	9	.	.	25	2.1
FREE MOVEMENT (EG. RUNNING)	5	12	7	.	.	24	2.0
OTHER SOURCE	5	7	10	24	25	71	6.0
SUBTOTAL	15	30	26	24	25	120	10.1
WORKING SURFACES							
GROUND (OUTDOORS)	12	13	16	18	17	76	6.4
OTHER SOURCE	5	6	7	9	8	35	2.9
SUBTOTAL	17	19	23	27	25	111	9.3
HANDTOOLS-POWERED							
CHAIN SAW	15	12	9	5	9	50	4.2
OTHER SOURCE	2	6	4	5	4	21	1.8
SUBTOTAL	17	18	13	10	13	71	6.0
WOOD ITEMS-NEC							
LOGS	19	17	13	.	.	49	4.1

(CONTINUED)

3.2 Source of Injury(continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
WOOD ITEMS-NEC							
OTHER SOURCE	4	7	4	1	5	21	1.8
SUBTOTAL	23	24	17	1	5	70	5.9
HANDTOOLS-UNPOWERED	3	9	10	7	7	36	3.0
MACHINES	1	12	3	10	7	33	2.8
METAL ITEMS-NEC	4	2	6	8	6	26	2.2
ALL OTHER SOURCES	12	29	22	25	19	107	9.0
Total	179	263	261	248	241	1,192	100.0

3.3 Type of Event

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
STRUCK BY							
STRUCK BY FLYING OBJECT	.	3	11	34	27	75	6.3
STRUCK BY FALLING OBJECT-NEC	20	21	22	.	.	63	5.3
STRUCK BY FALL OBJ DURING HANDLING	9	8	6	4	3	30	2.5
OTHER TYPE	25	53	33	23	23	157	13.2
SUBTOTAL	54	85	72	61	53	325	27.3
VEHICLE INCIDENTS							
HIGHWAY-OVERTURNED VEHICLE	7	11	19	6	9	52	4.4
OTHER TYPE	14	14	16	20	20	84	7.0
SUBTOTAL	21	25	35	26	29	136	11.4
BODILY REACTION							
REACTION FROM VOLUNTARY MOTION	9	24	15	4	10	62	5.2
REACTION FROM INVOLUNTARY MOTION	6	6	8	14	9	43	3.6
OTHER TYPE	.	.	3	7	6	16	1.3
SUBTOTAL	15	30	26	25	25	121	10.2
OVEREXERTION							
LIFTING OBJECTS	5	11	7	8	7	38	3.2
OTHER TYPE	6	13	16	14	16	65	5.5
SUBTOTAL	11	24	23	22	23	103	8.6
FALL ON SAME LEVEL							
FALL TO WALKWAY, WORKING SURFACE	8	7	11	13	11	50	4.2
FALL ONTO OR AGAINST OBJECTS	8	14	6	8	7	43	3.6
OTHER TYPE	1	1	1	.	.	3	0.3
SUBTOTAL	17	22	18	21	18	96	8.1
FALL FROM ELEVATION							
FALL FROM VEHICLES	9	10	11	9	9	48	4.0

(CONTINUED)

3.3 Type of Event(continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
FALL FROM ELEVATION							
OTHER TYPE	6	5	8	11	10	40	3.4
SUBTOTAL	15	15	19	20	19	88	7.4
CAUGHT IN, UNDER OR BETWEEN	12	12	16	12	12	64	5.4
STRUCK AGAINST	6	7	9	11	11	44	3.7
RUBBED OR ABRADED	5	2	10	8	.	25	2.1
ALL OTHER TYPES, UNS	23	41	33	42	51	190	15.9
Total	179	263	261	248	241	1,192	100.0

3.4 Part of Body Affected

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
BACK							
LUMBAR (LOWER BACK)	17	31	30	4	7	89	7.5
OTHER PART	17	22	17	32	45	133	11.2
SUBTOTAL	34	53	47	36	52	222	18.6
LEG(S)							
KNEE	14	22	22	26	23	107	9.0
LOWER LEG	11	16	6	15	7	55	4.6
OTHER PART	6	7	8	9	10	40	3.4
SUBTOTAL	31	45	36	50	40	202	16.9
OTHER TRUNK							
SHOULDER(S)	11	17	11	15	20	74	6.2
CHEST-INCLUDES INTERNAL ORGANS	7	10	7	9	11	44	3.7
HIP(S)-INCLUDES PELVIC ORGANS	4	7	6	5	4	26	2.2
OTHER PART	2	5	1	3	.	11	0.9
SUBTOTAL	24	39	25	32	35	155	13.0
ANKLE(S) & FOOT(FEET) -NOT TOES							
ANKLE(S)	14	12	17	17	18	78	6.5
FOOT(FEET) -NOT ANKLES OR TOES	16	9	15	15	10	65	5.5
SUBTOTAL	30	21	32	32	28	143	12.0
OTHER HEAD, NECK							
NECK	6	7	14	6	9	42	3.5
OTHER PART	5	10	15	7	10	47	3.9
SUBTOTAL	11	17	29	13	19	89	7.5
WRIST(S) & HAND(S) -NOT FINGERS							
HAND(S) -NOT WRISTS OR FINGERS	9	12	13	8	6	48	4.0
WRIST(S)	2	13	10	10	6	41	3.4

(CONTINUED)

3.4 Part of Body Affected(continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
WRIST(S) & HAND(S) -NOT FINGERS							
SUBTOTAL	11	25	23	18	12	89	7.5
FINGER(S)	11	17	18	17	16	79	6.6
MULTIPLE MAJOR BODY PARTS	11	8	15	20	9	63	5.3
EYE(S) -OPTIC NERVE,VISION	6	9	10	12	2	39	3.3
FACE	4	12	8	4	8	36	3.0
ARM(S) (ABOVE WRIST)	4	5	11	4	11	35	2.9
ALL OTHER PARTS, UNS	2	12	7	10	9	40	3.4
Total	179	263	261	248	241	1,192	100.0

3.5 Occupation of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
FORESTRY & LOGGING							
LABOR-FORESTRY & LOGGING	33	54	49	48	41	225	18.9
TIMBER CUTTING	39	38	32	23	24	156	13.1
FORESTRY & LOGGING-NEC	5	18	24	9	10	66	5.5
LOG HOISTING, SORTING, & MOVING	10	15	5	9	13	52	4.4
OTHER OCCUPATION	3	5	2	6	3	19	1.6
SUBTOTAL	90	130	112	95	91	518	43.5
TRANSPORT OPERATORS							
TRUCK DRIVERS	46	50	65	64	71	296	24.8
OTHER OCCUPATION	1	1	1	.	.	3	0.3
SUBTOTAL	47	51	66	64	71	299	25.1
FARMING, FISHING & HUNTING	4	9	10	4	7	34	2.9
ALL OTHER OCCUPATIONS, UNS	38	73	73	85	72	341	28.6
Total	179	263	261	248	241	1,192	100.0

3.6 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
01 - 05 DAYS LOST	34	49	46	52	52	233	19.5
06 - 10 DAYS LOST	19	42	35	35	29	160	13.4
11 - 15 DAYS LOST	14	30	23	10	19	96	8.1
16 - 20 DAYS LOST	11	14	10	8	10	53	4.4
21 - 30 DAYS LOST	13	26	26	20	19	104	8.7
31 - 40 DAYS LOST	7	19	13	17	25	81	6.8
41 - 50 DAYS LOST	4	10	13	16	8	51	4.3
51 OR MORE DAYS LOST	70	66	90	85	74	385	32.3
DAYS LOST-UNSPECIFIED, 0	7	7	5	5	5	29	2.4
Total	179	263	261	248	241	1,192	100.0

4. Injured Worker Characteristics

4.1 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
A. LESS THAN 1 MONTH	64	73	71	65	54	327	27.4
B. 1 MONTH TO < 6 MONTHS	50	103	100	75	71	399	33.5
C. 6 MONTHS TO < 1 YEAR	9	14	19	10	12	64	5.4
D. 1 YEAR OR MORE	26	20	27	22	30	125	10.5
E. TIME-UNSPECIFIED	30	53	44	76	74	277	23.2
Total	179	263	261	248	241	1,192	100.0

4.2 Age of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
15-19 YEARS	17	20	20	17	10	84	7.0
20-24 YEARS	32	68	56	57	45	258	21.6
25-34 YEARS	64	87	84	79	65	379	31.8
35-44 YEARS	38	37	52	54	71	252	21.1
45-54 YEARS	18	38	29	29	35	149	12.5
55-64 YEARS	10	12	16	8	12	58	4.9
65 YRS AND OVER	.	1	2	3	2	8	0.7
AGE-UNSPECIFIED	.	.	2	1	1	4	0.3
Total	179	263	261	248	241	1,192	100.0

4.3 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
MALE	166	238	237	222	221	1,084	90.9
FEMALE	11	22	22	17	17	89	7.5
GENDER-UNSPECIFIED	2	3	2	9	3	19	1.6
Total	179	263	261	248	241	1,192	100.0

5. Number of Employers that received/renewed a Certificate of Recognition as a result of an External Audit in 1997

	Certified Employers	Cert. & Uncert (# of Accounts)	% Certified
Logging & Woodlands Operations (Industry # 03100)	10	2,691	0.4
Timber Management (Industry # 03902)	1	131	0.8
Forestry	11	2,822	0.4

6. Cost of Claims, Payroll, & Premiums

6.1 Forestry Costs

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$1,105,090				
1994	\$1,216,987	\$1,287,347			
1995	\$500,921	\$1,208,449	\$1,599,819		
1996	\$202,155	\$661,538	\$428,669	\$1,580,485	
1997	\$184,650	\$856,131	\$686,353	\$727,457	\$1,674,233
Total Costs	\$3,209,802	\$4,013,465	\$2,714,841	\$2,307,942	\$1,674,233

Total Payroll	\$85,929,858	\$125,173,139	\$138,700,995	\$132,322,704	\$139,820,484
Total Premiums	\$9,601,945	\$13,735,875	\$11,860,224	\$7,628,466	\$6,806,618

The above cost for claims, total payroll and premiums are for the five year period 1993 through 1997. The data is as at April 14, 1998.

The claim cost amount reflect only 'paid or current' cost on claims which have occurred in the five year period. These cost are tracked by year of occurrence and year that the cost were transacted. These cost are incomplete in that a workers compensation claim may take many years to be closed.

The payroll have been totalled for a year.

The premium is the total of employer's premium paid for each year.

7. Occupational Fatalities

An occupational fatality is the death of a worker which results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general categories: motor vehicle collision, workplace incident and occupational disease. Each of these is described below.

Motor Vehicles Incidents

Motor vehicles incidents typically involve a non-industrial vehicles operating on public roads in which the fatally injured worker was either a driver or a passenger. This category also includes fatalities involving air plane crashes, train crashes, helicopter crashes etc.

Workplace Incidents

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. This is the type of fatality that Alberta Labour typically investigates.

Occupational Disease

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusive work-related. Examples are asbestos and black lung disease. Occupational diseases are usually diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the exposure occurred. This category should, therefore, not be interpreted to reflect present work site hazards. This category also includes heart attacks suffered on the job.

Each year the Workers' Compensation Board (WCB) accepts occupational fatality claims for compensation. Claims accepted for compensation in a particular year does not mean the event or exposure happened in that year. Most of the occupational disease fatalities accepted in a particular year are the result of incidents or exposure from prior years.

Description of Forestry Fatalities Accepted by WCB Alberta, 1993-1997

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1993	0	0.0	0	0.0	0	0.0	0	100
1994	0	0.0	0	0.0	2	100.0	2	100
1995	1	33.3	0	0.0	2	66.7	3	100
1996	1	33.3	0	0.0	2	66.7	3	100
1997	0	0.0	1	25.0	3	75.0	4	100
Total	2	16.7	1	8.3	9	75.0	12	100

8. OHS Investigated Occupational Fatalities, 1993-1997

Primary Forest Activity (Forestry) (11)

YEAR:	1993	FILE:	0763
OCCUPATION:	Journeyman, Millwright and Crane Operator	AGE:	52
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	25 years		

DESCRIPTION: A worker was fatally injured when he was struck by the end of a crane boom. The boom was being installed on a log deck when a lifting sling broke, allowing the boom to fall, and strike the worker who was under the suspended load. The injury to the worker was caused by using a tag line that was too short, which forced the worker to a position under the boom, causing the boom to strike the worker when the rigging failed. The companies have been instructed to ensure that proper equipment designed for the task be used in all future lifts. The company responsible for the work site have developed written rigging procedures and will ensure that these procedures are adhered to. Presentations on responsibilities under the OHS Act will be presented to all employees and managers to assist the company in making their employees aware of the duties of supervisors and workers in health and safety matters.

YEAR:	1994	FILE:	0782
OCCUPATION:	Logger	AGE:	35
INDUSTRY:	Logging, Woodland Operations		
EXPERIENCE:	Approximately 3 years		

DESCRIPTION: The worker had been removing trees from his LTP. He was working alone at the time of the accident. Circumstances indicate he was topping a fallen tree and was struck by another large poplar tree. The premise is the tree had been partially cut and not felled at the time. Later a gust of wind toppled it onto the worker.

YEAR:	1994	FILE:	0795
OCCUPATION:	Equipment Operator	AGE:	39
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	4 years		

DESCRIPTION: A worker was fatally injured when he was crushed in a tree harvester's processing head. The worker, employed in a tree harvesting operation, was operating a track excavator machine fitted with a Lake Tree processor on its boom. The machine is used to fall, delimb, and top trees. The processor includes a saw, grapple arms, feed rolls, delimbing knives and an onboard computer. Part of the computer's function is to record the length of a tree as the top is cut off. This function is done by means of a length encoder located in the processing head. On the day of the incident, the length encoder stopped functioning properly and repairs were required. The worker, who was alone at the time, positioned the processing head on the ground, parked the machine and began to change the encoder. In order to change the encoder, the worker positioned himself in the bight of the processing head and removed the defective encoder. It appears while he was attempting to install a new encoder, an electrical short occurred causing the processing head's arms to close, crushing the worker.

YEAR:	1995	FILE:	0812
OCCUPATION:	Log Loader	AGE:	45
INDUSTRY:	Logging , Woodlands Operations		
EXPERIENCE:	20 Years		

DESCRIPTION: The worker was unloading a log loader from a sixteen-wheel tractor trailer unit. He was walking the loader off the trailer when the unit shifted ahead as it descended the beaver-tailed trailer. The sudden shift of the loader caused the front tracks of the unit to contact the ground and the unfastened cab of the loader struck the ground. The worker sustained injuries that later resulted in his death

YEAR:	1995	FILE:	0823
OCCUPATION:	Chainsaw Operator	AGE:	28
INDUSTRY:	Forestry		
EXPERIENCE:	10 years		

DESCRIPTION: The company was harvesting trees on private land. The operation consisted of one faller, falling trees with chainsaw, two workers operating mechanical wheeled skidder and two workers limbing, topping and cutting trees into lengths. The worker was employed as a chainsaw operator falling trees in a logging operation. The worker notched and put the falling cut in a large poplar tree. The tree, instead of falling, leaned back against the falling cut and remained standing. The worker then moved about 30 metres from the partially cut tree and started the notch in another tree. While he was bent over cutting the notch, the partially cut tree fell, striking the worker causing fatal injuries.

YEAR:	1996	FILE:	0829
OCCUPATION:	Faller	AGE:	51
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	20 years		

DESCRIPTION: The faller was cutting trees in an area of mature growth. There were several large black poplar trees, which appeared partially rotten and stumps in the area showed varying quality of cut. The faller cut one tree and it was moved to the south with the skidder. The employer moved the skidder to the south. The faller cut the second tree and the faller moved away to the south to clear the area. The falling spruce tree hit a poplar tree, knocking off the top portion, which fell and struck the faller, fatally injuring him.

YEAR:	1997	FILE:	0851
OCCUPATION:	Equipment Operator	AGE:	36
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	Two years		

DESCRIPTION: The slasher is a large machine used to cut trees into log lengths. The slasher consists of an operators cab, a log grapple, a log deck and a large saw used to cut the trees. Two workers were preparing to remove a portion of a broken saw guard. The injured worker had positioned himself up on the frame of the saw, when the other worker activated the saw to move it up onto the slasher deck. When the saw was activated, the worker was crushed between the moving saw frame and the fixed saw guard.

YEAR:	1997	FILE:	0853
OCCUPATION:	Faller	AGE:	28
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	Two years		

DESCRIPTION: A 28-year old male was employed as a hand faller for a company contracted to a Metis Settlement logging company in Northwestern Alberta. The faller's chainsaw became stuck in a tree and he called a skidder over to push the tree so he could dislodge the saw. The skidder operator backed his machine into the tree, and in doing so, his left front tire contacted a 7-metre high dry snag, knocking it over and onto the faller who was standing 5 metres behind and to the left of the skidder. The faller received fatal head and crushing injuries.

YEAR:	1997	FILE:	0869
OCCUPATION:	Tree Faller	AGE:	60
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	33 years		

DESCRIPTION: The worker was a member of a crew of workers harvesting trees in a logging operation. He was operating a chain saw falling trees. He cut a large pine tree which was supporting a leaning dry snag. When the tree that he cut fell, the dry sang came down striking the worker on his head causing fatal injuries.

9. Forest Product Manufacturing

This section provide a comprehensive picture of workplace health and safety in Alberta's Forest Products Manufacturing industry. Cost of injuries, total payroll and premiums information and number of employers that received a certificate of recognition as a result of an external audit in 1997 are also provided.

Description of Forest Product Manufacturing Industries:

Employers in this activity may be classified into the following industries:

Sawmills and Planing Mills, Manufactures of Wood Products, Peeling and Pointing of Post, Wood Preserving, Pulp Mills, and Plywood, Chipboard, Strand board and Fibreboard Mills.

9.1 Industry Description

Sawmills & Planing Mills (Industry # 25100)

This classification involves sawing logs into rough lumber of various dimensions varying from 1" X 2" to 12" X 12". Sawmills vary from one man portable mills to large automated mills employing in excess of 100 personnel. Labour is performed largely by those trained on the job and would include equipment operators, sawyers, scalers and labourers. Large mills will employ mechanics, millwrights, welders, ect.

Planing mills often accompany the large sawmills and function as a final cutting process for the timber. Rough lumber is further reduced into the final product by various types of planing methods. The most common of which is a set of knives attached to a rotating drum.

Various forms of specialized remanufacturing also forms part of this industry. This may involve cutting of grooves, bevels, edges, and may include cutting special edges on the boards such as tongue and grooves or ship lap. Remanufacturing lumber to metric sizes for overseas markets is also prevalent in this industry.

The restoration of railway ties and the manufacture of wooden shakes are activities also included in this industry.

Large mills often operate huge kilns to dry their dressed lumber.

This industry encompasses all related activities including: operation of lumberyard and wholesaling with warehousing. Also included is the administration of a mill's woodlands, but only when the mills itself is not actively logging their harvest area.

Manufacturing of Wood Products (Industry # 25401)

Manufacturing includes cutting lumber to specification, assembling and finishing the product. The assembly may consist of gluing, clamping and/or nailing pieces together. Finishing may be fancy or plain, depending on the product, and may consist of planing, sanding, scroll work, filling and coating. This industry includes the manufacturing of pallets, wooden boxes, and grain doors; also, shuffleboards, pool tables and other game tables.

The operation may be run on its own such as a separate shop or factory, or in conjunction with another industry such as lumber yard. When installing their own product, it forms part of this industry.

Products manufactured and/or repaired in this industry include prefab homes, mobile homes, garages, granaries, livestock feeders and pre-cut logs for log houses.

Peeling & Pointing of Post (Industry # 25900)

Post of uniform length are fed into a machine that rotates them much the same as a lathe at the same time peeling the bark off. One end is then ground to a point. The post are usually dip-treated following the peeling and pointing.

When done in conjunction with peeling and pointing, the treating is considered incidental.

Treating of Timber (Industry # 25901)

This classification involves the coating of wood with a preservative, including items such as fence posts, hydro poles bridge timbers and railroad ties.

Some employers in this industry are involved only in dip-treating posts and poles. The product is immersed in a preservative solution in an open tank. Square cedar post for fences are usually treated on one end only.

Another, more elaborate process uses large cylinders (often seven feet in diameter and 150 feet long). The ties, timber, post or poles to be treated are strapped to small rail carts then loaded into cylinders. The timber is then subject to pressure and heat while being treated with the appropriate preservative. Following the prescribed time (which varies by product), the preservative solution is pumped out and the timber is then vacuum dried. The timber then leaves the cylinder and is moved to a temporary storage area to drip dry.

Some pressure treaters will slightly modify the product by predrilling holes for hardware, cutting special ends and cutting out defective areas. Pressure treaters usually have the capacity to peel,

cut and incise their product using variety of machinery and hand tools. Equipment used includes forklifts and mobile cranes.

Pulp Mills(Industry # 27102)

This industry covers the actual conversion of wood to wood pulp.

There are two types of pulp manufacturing:
bleached kraft pulp mills and chemithermomechanical pulp mills(CTMP).

Bleached kraft pulp mills rely on chemical processes to break down wood into paper and often are the source of the rotten egg smell. CTMP mills rely on the mechanical grinding process to break down wood into paper and are comparably much cleaner smelling.

This industry includes the manufacture of paper when performed by the same employer.

Changes in technology may introduce new methods of converting wood into paper; however, such process will still remain classified as pulp mills. Also included in this classification is the administration of the mills woodlands, but only when the mills itself is not actively logging their harvest area.

Plywood, Chipboard, Strandboard & Fibreboard Mills (Industry # 27103)

Chipboard, Strandboard and Fibreboard: Spruce and aspen logs are cut to 2' and 3' length, then moved by conveyor to a machine that slices them into small chips or wafers. The chips are conveyed to a rotating dryer where moisture is removed, then to a chamber, where a mixture of glues and waxes is sprayed onto the chips. The chips are dropped into trays 16' long by 4' wide which move to a heated press. Once in place, the trays (and chips) are pressed and heated to bond the chips into a board. 8' by 4' sheet are then cut and passed to a dryer where they are rotated until cool, then stacked and prepared for shipment.

With fibreboards, it is the fibres being pressed into board rather than chips or wafers. Otherwise the processes are similar. This industry includes the manufacture of straw matting.

Plywood: Trees (mostly white spruce) are debarked and cut into peelers (8' 6" long), sorted and conditioned or steamed for 10 to 35 hours. The logs are then placed on a lathe and strips of veneer are peeled off from 1/10 to 1/8 inch thick. A clipper cuts out any defects, the veneer is trimmed and sent to the plywood mill. At the mills the sheets are sorted into grades, then lined up in presses. The interior cross banding (narrow strips) are glued on both sides and placed by hand between the layers. The sheets are glued and built up to required thickness. The ends are trimmed and the units are placed in a loading basket and put in the hot press automatically.

Staining & Painting: Employers who paint or stain board products are also included in this industry. Staining is a simple process of passing a board through a mechanical stainer (often called an Olympic Stainer). The stainer will apply stain (or paint) to both sides and the edges of the board. Boards are then stacked to dry. This entire process can be handled by one person.

This industry encompasses all related activities including the wholesaling and warehousing of board products. Also included is the administration of a mill's woodlands, but only when the mill itself is not actively logging their harvest area.

Economic Activities

Forest products manufacturing industries employs about 40,000 people in Alberta (18,000 full-time jobs as well as 22,000 indirect jobs) and is the third largest primary economic sector in Alberta. With an annual operating expenditure of over \$2 billion, this industry is a major source of employment and revenue in more than 50 Alberta towns and cities.

Like roller coasters on different tracks, Alberta forest products demonstrated the economic salvation of product diversification. While the values of one product category declined, the values of another begun to recover. 1997 year-end statistics indicated that total shipment value was \$3.3 billion, compared with almost \$3.0 billion in 1996. Production of lumber and secondary manufactured products, pulp and paper, and panel boards were all ahead of the previous year. Shipment of lumber and secondary products was valued at \$1.2 billion, 5% more than 1996. Panel board production was valued at \$410 million, up 39%. Total production value of pulp was \$1.6 billion, representing an 8% increase over 1996. While pulp prices achieved modest increase throughout 1997, they remained at levels that barely cover production.

Based on the continued volatility of overseas market and ongoing restriction imposed by the softwood lumber agreement with the U.S, 1998 is expected to be difficult year for the Alberta forest product industry with the degree of difficult driven by factors outside Canada.

Summary of Injury and Disease analysis

For the period 1993-1997, Pulp Mills and Manufacturing of Plywoods are the only industries with LTC rates consistently lower than that of the provincial average. For example, in 1997, Peeling and Pointing of Post had a rate which is four times higher than the provincial average.

In 1997, injuries to the wrist, hands and fingers accounted for 31% of the claims while back injuries accounted for 23%. 44% of all injuries in 1997 resulted in between one and five days of work lost. 43% of the injured workers had been employed for more than a year. 64% of the claims were from workers in the manufacture of wood products industry.

9.2 Injury And Disease Statistics

9.2.1 Lost-Time Claim(LTC) & Duration Rates

9.2.2 All Forest Product Manufacturing Industries

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	859	\$3,840,355	15,252	24,916	163	877	5.8
1994	891	\$3,251,219	16,525	23,120	140	953	5.8
1995	950	\$2,541,702	17,988	21,603	120	891	5.0
1996	929	\$2,609,430	20,534	19,228	94	1013	4.9
1997	954	\$3,809,259	22,030	27,477	125	1293	5.9

9.2.3 LTC Rates By Industry

Sawmills And Planing Mills

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	252	\$953,614	4,458	7,886	177	261	5.9
1994	273	\$1,538,589	5,284	9,497	180	317	6.0
1995	295	\$981,574	5,189	7,683	148	319	6.1
1996	311	\$911,452	5,940	7,149	120	302	5.1
1997	308	\$1,358,591	6,474	9,424	146	359	5.5

Wood Products, Mfg

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	558	\$2,077,975	6,057	15,074	249	545	9.0
1994	565	\$1,146,310	6,783	11,997	177	554	8.2
1995	592	\$1,372,848	6,767	12,657	187	500	7.4
1996	563	\$1,198,482	8,229	10,540	128	624	7.6
1997	589	\$1,896,641	10,479	15,792	151	823	7.9

Posts,Peeling/Pointing

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	19	\$9,398	62	91	N/A	3	4.8
1994	20	\$10,005	70	133	N/A	8	11.5
1995	21	\$14,213	72	157	N/A	4	5.6
1996	18	\$18,116	63	228	N/A	8	12.6
1997	19	\$47,360	63	443	N/A	9	14.3

Wood Preserving

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	6	\$5,986	109	61	N/A	6	5.5
1994	5	\$16,407	108	130	N/A	8	7.4
1995	6	\$28,400	140	232	N/A	13	9.3
1996	5	\$16,646	88	136	N/A	5	5.7
1997	4	\$44,151	93	248	N/A	13	14.0

Pulp Mills

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	12	\$456,387	3,130	781	25	35	1.1
1994	12	\$452,798	2,629	775	29	54	2.1
1995	13	\$63,240	3,911	238	N/A	28	0.7
1996	13	\$51,642	4,201	283	N/A	28	0.7
1997	15	\$95,549	2,799	444	16	38	1.4

Plywood,Strand/Fiberboard Mfg

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	12	\$336,996	1,435	1,023	N/A	27	1.9
1994	16	\$87,109	1,652	588	N/A	12	0.7
1995	23	\$81,427	1,910	636	N/A	27	1.4
1996	19	\$413,092	2,013	892	44	46	2.3
1997	19	\$366,968	2,122	1,126	53	51	2.4

9.2.4 LTC Rates By Size² Of Employer - 1997 Only

Size of Employer	# of Accounts	LTCs	Person - Years	LTC Rate
A: 0< PYs <=1	348	21	153	13.7
B: 1 < PYs < 5	226	55	550	10.0
C: 5 <= PYs < 10	100	81	750	10.8
D: 10 <= PYs < 20	71	108	1,013	10.7
E: 20 <= PYs < 50	62	167	1,932	8.6
F: 50 <= PYs < 100	27	140	1,818	7.7
G: PYs >=100	54	721	15,814	4.6
H: Invalid	66	N/A	0	N/A
Total	954	1293	22,030	5.9

² Size is measured in terms of estimated person-years

9.3 Analysis of The Lost-Time Claims

9.3.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
SPRAIN, STRAIN	348	339	313	352	485	1,837	36.5
CUT, LACERATION, PUNCTURE	154	183	163	189	223	912	18.1
BRUISE, CONTUSION, CRUSHING	110	138	126	150	155	679	13.5
FRACTURE & DISLOCATION							
FRACTURE	77	85	91	81	134	468	9.3
OTHER NATURE	.	6	3	4	15	28	0.6
SUBTOTAL	77	91	94	85	149	496	9.9
OTHER INJURY							
AMPUTATION, ENUCLEATION	21	13	13	17	40	104	2.1
OTHER NATURE	10	16	21	62	78	187	3.7
SUBTOTAL	31	29	34	79	118	291	5.8
SCRATCH, ABRASION	25	25	24	41	41	156	3.1
INFLAMED/IRRITATED JOINTS, ETC.	31	30	30	21	39	151	3.0
OTHER DISEASE	15	29	24	31	30	129	2.6
ALL OTHER NATURES, UNS	86	89	83	65	53	376	7.5
Total	877	953	891	1,013	1,293	5,027	100.0

9.3.2 Part of Body Affected

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
BACK							
LUMBAR (LOWER BACK)	155	145	124	51	42	517	10.3
OTHER PART	67	73	77	184	257	658	13.1
SUBTOTAL	222	218	201	235	299	1,175	23.4
FINGER(S)	165	191	178	180	251	965	19.2
WRIST(S) & HAND(S)-NOT FINGERS							
HAND(S)-NOT WRISTS OR FINGERS	59	72	56	68	88	343	6.8
WRIST(S)	43	45	43	45	60	236	4.7
SUBTOTAL	102	117	99	113	148	579	11.5
OTHER TRUNK							
SHOULDER(S)	44	50	41	47	71	253	5.0
HIP(S)-INCLUDES PELVIC ORGANS	20	24	20	26	32	122	2.4
CHEST-INCLUDES INTERNAL ORGANS	12	22	22	35	27	118	2.3
OTHER PART	9	12	15	6	14	56	1.1
SUBTOTAL	85	108	98	114	144	549	10.9
ANKLE(S) & FOOT(FEET)-NOT TOES							
ANKLE(S)	55	37	53	57	67	269	5.4
FOOT(FEET)-NOT ANKLES OR TOES	34	48	32	36	44	194	3.9
SUBTOTAL	89	85	85	93	111	463	9.2
LEG(S)							
KNEE	31	45	36	49	59	220	4.4
OTHER PART	31	20	31	29	45	156	3.1
SUBTOTAL	62	65	67	78	104	376	7.5

(CONTINUED)

9.3.2 Part of Body Affected (Continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
ARMS(S) (ABOVE WRIST)	49	60	47	50	59	265	5.3
OTHER HEAD, NECK							
NECK	17	22	29	21	32	121	2.4
OTHER PART	19	18	21	19	19	96	1.9
SUBTOTAL	36	40	50	40	51	217	4.3
EYE(S) -OPTIC NERVE,VISION	26	25	24	40	48	163	3.2
ALL OTHER PARTS, UNS	41	44	42	70	78	275	5.5
Total	877	953	891	1,013	1,293	5,027	100.0

9.3.3 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
WOOD ITEMS-NEC							
LUMBER	87	107	87	43	66	390	7.8
OTHER SOURCE	83	91	71	94	122	461	9.2
SUBTOTAL	170	198	158	137	188	851	16.9
SOURCE-UNS	117	152	168	220	190	847	16.8
BODILY MOTION							
FREE MOVEMENT (EG. RUNNING)	39	43	30	.	.	112	2.2
OTHER SOURCE	61	57	77	100	154	449	8.9
SUBTOTAL	100	100	107	100	154	561	11.2
MACHINES							
SAWS-MACHINE	37	46	37	54	84	258	5.1
OTHER SOURCE	60	46	37	24	45	212	4.2
SUBTOTAL	97	92	74	78	129	470	9.3
WORKING SURFACES	79	63	44	83	107	376	7.5
METAL ITEMS-NEC							
METAL FASTENERS	18	28	13	39	55	153	3.0
OTHER SOURCE	36	55	34	37	54	216	4.3
SUBTOTAL	54	83	47	76	109	369	7.3
HANDTOOLS-POWERED	39	42	48	33	50	212	4.2

(CONTINUED)

9.3.3 Source of Injury (Continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
FURNITURE & FIXTURES	29	38	40	45	36	188	3.7
HANDTOOLS-UNPOWERED	31	31	31	35	42	170	3.4
VEHICLES	36	30	24	34	46	170	3.4
BOXES, CONTAINERS	29	27	35	27	42	160	3.2
BUILDINGS, STRUCTURES	17	17	14	25	28	101	2.0
ALL OTHER SOURCES	79	80	101	120	172	552	11.0
Total	877	953	891	1,013	1,293	5,027	100.0

9.3.4 Type of Event

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
OVEREXERTION							
LIFTING OBJECTS	121	129	114	118	155	637	12.7
PULLING/PUSHING OBJECTS	30	20	25	34	39	148	2.9
OTHER TYPE	55	65	57	61	83	321	6.4
SUBTOTAL	206	214	196	213	277	1,106	22.0
STRUCK BY							
STRUCK BY FLYING OBJECT	18	18	27	121	132	316	6.3
STRUCK BY FALL OBJ DURING HANDLING	18	29	10	22	37	116	2.3
OTHER TYPE	117	162	140	68	113	600	11.9
SUBTOTAL	153	209	177	211	282	1,032	20.5
CAUGHT IN, UNDER OR BETWEEN							
CAUGHT IN RUNNING/MESHING OBJECTS	39	39	39	41	59	217	4.3
OTHER TYPE	73	72	67	57	79	348	6.9
SUBTOTAL	112	111	106	98	138	565	11.2
BODILY REACTION							
REACTION FROM VOLUNTARY MOTION	62	65	40	36	66	269	5.4
REACTION FROM INVOLUNTARY MOTION	37	35	35	34	40	181	3.6
OTHER TYPE	1	.	30	28	42	101	2.0
SUBTOTAL	100	100	105	98	148	551	11.0
STRUCK AGAINST							
STRUCK AGAINST MOVING OBJECT	36	41	24	32	55	188	3.7
STRUCK AGAINST STATIONARY OBJECT	18	23	18	30	28	117	2.3
OTHER TYPE	16	18	19	24	38	115	2.3
SUBTOTAL	70	82	61	86	121	420	8.4
FALL ON SAME LEVEL							
FALL TO WALKWAY, WORKING SURFACE	35	24	15	22	32	128	2.5

(CONTINUED)

8.3.4 Type of Event (Continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
FALL ON SAME LEVEL							
OTHER TYPE	14	22	19	35	26	116	2.3
SUBTOTAL	49	46	34	57	58	244	4.9
FALL FROM ELEVATION	48	40	39	50	59	236	4.7
RUBBED OR ABRADED							
ABRADED BY FOREIGN MATTER IN EYES	18	19	19	22	30	108	2.1
OTHER TYPE	17	13	14	1	3	48	1.0
SUBTOTAL	35	32	33	23	33	156	3.1
ALL OTHER TYPES, UNS	104	119	140	177	177	717	14.3
Total	877	953	891	1,013	1,293	5,027	100.0

9.3.5 Occupation of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
FABRICATING, REPAIR							
CABINET & WOOD FURNITURE MAKERS	76	79	69	61	83	368	7.3
LABOR-WOOD FABRICATING/REPAIRING	71	50	58	38	73	290	5.8
MECHANICS-INDUSTRIAL, FARM MACHINERY	30	26	30	30	33	149	3.0
WOOD FABRICATING/REPAIRING-NEC	36	38	25	26	21	146	2.9
LABOR-PRODUCT FABRICATING/REPAIR-NEC	26	29	21	22	29	127	2.5
OTHER OCCUPATION	45	27	34	30	46	182	3.6
SUBTOTAL	284	249	237	207	285	1,262	25.1
PROCESSING							
LABOR-WOOD PROCESSING (NOT PAPER)	76	74	72	58	73	353	7.0
OTHER OCCUPATION	57	60	54	33	49	253	5.0
SUBTOTAL	133	134	126	91	122	606	12.1
CONSTRUCTION OCCUPATIONS							
CARPENTERS	44	43	35	55	90	267	5.3
OTHER OCCUPATION	29	50	46	49	85	259	5.2
SUBTOTAL	73	93	81	104	175	526	10.5
MATERIALS HANDLING-NEC							
LABOR-MATERIALS HANDLING	25	34	32	21	45	157	3.1
HANDLING EQUIPMENT OPERATORS-NEC	20	21	21	24	35	121	2.4
OTHER OCCUPATION	10	18	13	19	26	86	1.7
SUBTOTAL	55	73	66	64	106	364	7.2
OCCUPATION-NEC							
LABOR-NEC	48	44	38	57	72	259	5.2
OTHER OCCUPATION	9	17	6	7	18	57	1.1
SUBTOTAL	57	61	44	64	90	316	6.3

(CONTINUED)

8.3.5 Occupation of Injured Worker (Continued)

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
MACHINING							
WOOD SAWING & RELATED (NOT SAWMILL)	9	21	21	23	30	104	2.1
OTHER OCCUPATION	36	46	33	28	41	184	3.7
SUBTOTAL	45	67	54	51	71	288	5.7
ALL OTHER OCCUPATION, UNS	230	276	283	432	444	1,665	33.1
Total	877	953	891	1,013	1,293	5,027	100.0

9.3.6 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
01 - 05 DAYS LOST	329	428	371	481	573	2,182	43.4
06 - 10 DAYS LOST	143	122	143	167	208	783	15.6
11 - 15 DAYS LOST	71	63	60	65	90	349	6.9
16 - 20 DAYS LOST	47	45	49	41	64	246	4.9
21 - 30 DAYS LOST	58	57	58	59	78	310	6.2
31 - 40 DAYS LOST	33	41	36	31	56	197	3.9
41 - 50 DAYS LOST	23	35	33	34	36	161	3.2
51 OR MORE DAYS LOST	156	141	124	99	156	676	13.4
DAYS LOST-UNSPECIFIED, 0	17	21	17	36	32	123	2.4
Total	877	953	891	1,013	1,293	5,027	100.0

10. Characteristics of The Injured Worker

10.1 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
A. LESS THAN 1 MONTH	91	113	86	89	165	544	10.8
B. 1 MONTH TO < 6 MONTHS	216	241	186	229	269	1,141	22.7
C. 6 MONTHS TO < 1 YEAR	87	93	113	91	154	538	10.7
D. 1 YEAR OR MORE	388	370	400	319	407	1,884	37.5
E. TIME-UNSPECIFIED	95	136	106	285	298	920	18.3
Total	877	953	891	1,013	1,293	5,027	100.0

10.2 Age of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
15-19 YEARS	50	78	51	86	128	393	7.8
20-24 YEARS	158	186	157	195	246	942	18.7
25-34 YEARS	352	349	334	373	411	1,819	36.2
35-44 YEARS	186	206	224	245	334	1,195	23.8
45-54 YEARS	74	84	81	81	125	445	8.9
55-64 YEARS	50	45	44	30	44	213	4.2
65 YRS AND OVER	2	4	.	2	3	11	0.2
AGE-UNSPECIFIED	5	1	.	1	2	9	0.2
Total	877	953	891	1,013	1,293	5,027	100.0

10.3 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
MALE	805	869	786	911	1,120	4,491	89.3
FEMALE	64	80	97	76	123	440	8.8
GENDER-UNSPECIFIED	8	4	8	26	50	96	1.9
Total	877	953	891	1,013	1,293	5,027	100.0

11. Number of Employers that received/renewed a Certificate of Recognition as a result of an External Audit in 1997

		Certified Employers	Cert. & Uncert (# of Accounts)	% Certified
Sawmills & Planing Mills	(Industry # 25100)	9	308	2.9
Manufacturing of Wood products	(Industry # 25401)	7	589	1.2
Peeling & Pointing of Post	(Industry # 25900)	0	19	0.0
Treating of Timber	(Industry # 25901)	0	4	0.0
Pulp Mills	(Industry # 27102)	7	15	46.7
Plywood//Fiberboard Mills	(Industry # 27103)	1	19	5.3
Forest Product Manufactures		24	954	2.5

12. Cost of Claims, Payroll, & Premiums

12.1 Forest Product Manufacturing Costs

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$2,729,715				
1994	\$2,721,583	\$2,691,009			
1995	\$2,040,062	\$1,885,471	\$2,146,177		
1996	\$921,298	\$1,116,747	\$1,487,988	\$2,098,139	
1997	\$511,171	\$660,318	\$627,764	\$1,454,774	\$3,164,399
Total Costs	\$8,923,829	\$6,353,545	\$4,261,930	\$3,552,914	\$3,164,399

Total Payroll	\$401,271,864	\$442,147,388	\$479,260,275	\$538,458,673	\$580,234,870
Total Premiums	\$19,148,766	\$20,798,489	\$18,269,941	\$18,377,389	\$18,949,864

The above cost for claims, total payroll and premiums are for the five year period 1993 through 1997. The data is as at April 14, 1998.

The claim cost amount reflect only 'paid or current' cost on claims which have occurred in the five year period. These cost are tracked by year of occurrence and year that the cost were transacted. These cost are incomplete in that a workers compensation claim may take many years to be closed.

The payroll have been totalled for a year.

The premium is the total of employer's premium paid for each year.

13. Occupational Fatalities

An occupational fatality is the death of a worker which results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general categories: motor vehicle collision, workplace incident and occupational disease. Each of these is described below.

Motor Vehicles Incidents

Motor vehicles incidents typically involve a non-industrial vehicles operating on public roads in which the fatally injured worker was either a driver or a passenger. This category also includes fatalities involving air plane crashes, train crashes, helicopter crashes etc.

Workplace Incidents

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. This is the type of fatality that Alberta Labour typically investigates.

Occupational Disease

Occupational disease fatalities consist of mostly recognized occupational disease, that is, disease known to be primarily or exclusive work-related. Examples are asbestos and black lung disease. Occupational diseases are usually diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the exposure occurred. This category should, therefore, not be interpreted to reflect present work site hazards. This category also includes heart attacks suffered on the job.

Each year the Workers' Compensation Board (WCB) accepts occupational fatality claims for compensation. Claims accepted for compensation in a particular year does not mean the event or exposure happened in that year. Most of the occupational disease fatalities accepted in a particular year are the result of incidents or exposure from prior years.

**Description of Forest Product Manufacturing Fatalities
Accepted by WCB
Alberta, 1993-1997**

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1993	1	20.0	0	0.0	4	80.0	5	100
1994	1	25.0	2	50.0	1	25.0	4	100
1995	0	0.0	0	0.0	0	0.0	0	100
1996	1	33.3	0	0.0	2	66.7	3	100
1997	0	0.0	1	50.0	1	50.0	2	100
Total	3	21.4	3	21.4	8	57.1	14	100

14. OHS Investigated Occupational Fatalities, 1993-1997

Forest Product Manufacturers (6)

YEAR:	1993	FILE:	0769
OCCUPATION:	Operating Technician	AGE:	33
INDUSTRY:	Manufacture of Wood Pulp		
EXPERIENCE:	3 Months		

DESCRIPTION: An operating technician was drenched with water during a cleaning process. A number of the crew discovered that the quickest way to dry off after becoming wet was to stand inside the wind boxes with the door open. The wind boxes are part of the dryer used to do maintenance on the circulation fans. The temperatures can reach 90°C in these boxes. The worker entered one of the wind boxes and the door shut behind him. He was found approximately 30 minutes later and could not be resuscitated. The push rod mechanism used to release the door from the inside was corroded and totally inoperable.

YEAR:	1993	FILE:	0772
OCCUPATION:	Wet End Technician	AGE:	50
INDUSTRY:	Pulp & Paper Mills		
EXPERIENCE:	18 years		

DESCRIPTION: A worker was seriously injured during routine start-up activities at a pulp mill. He died a few days later as a result of a head injury sustained in the stock preparation area of the mill when a pump was started, forcing water and, possibly a projectile, out of a NOSS cleaner. It was concluded that the incident occurred because safe operating procedures were not followed during start-up, ie. the NOSS cleaner system was operated in a condition that allowed for a release of water/cap/cone through a cap hole in the canister while workers were nearby. The employer instituted engineering and policy changes to prevent a similar reoccurrence. Although the employer had documented operating instructions from the NOSS cleaner manufacturer, these were not entirely followed during start-up operations. The employer has instituted training/procedures to ensure safe practices are carried out in future.

YEAR:	1993	FILE:	0778
OCCUPATION:	Truck Driver	AGE:	44
INDUSTRY:	Manufacturing of Wood Boxes, Pallets, etc.		
EXPERIENCE:	20+ years		

DESCRIPTION: A flat bed tractor trailer unit operated by the deceased was parked inside the employers warehouse. The deceased was either standing at the back of the truck or walking around the back of his truck when a fork lift truck carrying construction materials entered the warehouse. The driver of the fork lift was unable to see beyond the load his equipment was carrying. He drove into the back of the truck pinning the fatally injured between the truck and the load of the fork lift.

-----FOREST PRODUCT MANUFACTURING-----

YEAR:	1994	FILE:	0800
OCCUPATION:	Canter	AGE:	49
INDUSTRY:	Sawmills and Planing Mills		
EXPERIENCE:	20 Years		

DESCRIPTION: A log become crossed in the infeed conveyor of a 4 saw Scrag. The canter left his canting position to straighten the log. The worker went and stood directly behind the sharp chain conveyor. The log became immobile in the saw causing the saw to heat up and waver violently. The wavering saw contacted the immobile cant causing it to lift up twist on its side and kickback. The cant was propelled through the air and struck the worker squarely in the chest. The worker was killed instantly.

YEAR:	1996	FILE:	0838
OCCUPATION:	Labourer - Pulp and Paper Industry	AGE:	27
INDUSTRY:	Plywood, Chipboard, Strand board and Fibreboard Mills		
EXPERIENCE:	Unspecified		

DESCRIPTION: A worker, employed by Ranger Board Ltd, was killed at Blue Ridge. The self-propelled elevated work platform she was using, was positioned near a large hydraulic press. The action of the press lifted the platform beyond its normal extended limits. As a result the platform tipped and the railing and hydraulics failed, causing the platform to collapse. She fell approximately 4.5 metres to the plant floor, sustaining fatal injuries.

YEAR:	1997	FILE:	0878
OCCUPATION:	Electrician	AGE:	42
INDUSTRY:	Plywood, chipboard, Strand board and fibreboard Mills		
EXPERIENCE:	19 years in electrical trade (Journeyman Electrician)		

DESCRIPTION: Two electricians were making adjustments to the moulding panel stacker outfeed rollcase. The stacker was operating in the automatic mode and the unit was not stopped or locked out by either electricians. One of them crawled underneath the stacker while the other placed himself on the opposite side to assist. When the adjustments were complete, the worker who was underneath the stacker started to crawl back out. The elevator of the stacker descended and pinned him against a lower cross member resulting in fatal injuries.

Appendix A: Terms, Definitions and Formulas

Lost-Time Claim(LTC)	A lost-time claim (LTC) is the claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are the claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.
Person-Years	Person-years estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate an average industry wage, and uses the average industry wage and employer payroll data to estimate person-years for each employer and each industry. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.
LTC Rate	The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-years estimates, and multiplying the result by 100. The LTC rate represents the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries or between years, can be used to indicate increase, decrease or differences in this risk. $\text{LTC Rate} = \frac{\text{Number of LTCs} \times 100}{\text{Estimated person-years}}$
Duration (Days Lost)	The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.
Duration Rate	The duration rate is calculated by dividing the number of work days lost(disability days) by the person-year estimate, and multiplying by 100. The result is expressed as 'days lost per 100 person-years worked', and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic costs. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims. $\text{Duration Rate} = \frac{\text{Disability Days} \times 100}{\text{Estimated person-years}}$
WCB Accepted Fatality	The death of a worker which results from work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.
NEC	Means 'Not Elsewhere Classified'
UNS	Means 'Unspecified'

APPENDIX B: 1997 Industry Codes

Primary Forest Activity

03100 - Logging/Woodland Operations
03902 - Timber Management

Forest Product Manufacturing

25100 - Sawmills/Planning Mills
25401 - Manufacturing of Wood Products
25900 - Peeling and Pointing of Post
25901 - Treating of Timber
27102 - Pulp Mills
27103 - Plywood/Chipboard/Strandbord/Fibreboard Mills

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